

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

cl 1. (Cancelled)

2. (Previously Presented): A semiconductor laser device having an index-guided structure and oscillating in a fundamental mode, comprising:

a lower cladding layer;

a lower optical waveguide layer formed above said lower cladding layer;

a quantum well layer formed above said lower optical waveguide layer;

an upper optical waveguide layer formed above said quantum well layer; and

a current confinement structure formed above said upper optical waveguide layer;

said upper optical waveguide layer has a first thickness smaller than a second thickness of said lower optical waveguide layer;

wherein a sum of said first and second thickness is 0.5 micrometers or greater.

3. (Previously Presented): A semiconductor laser device according to claim 2, wherein a bottom of said current confinement structure is at a height smaller than 0.25 micrometers above an upper surface of said quantum well layer.

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4. (Previously Presented): A semiconductor laser device according to claim 3, wherein said bottom of said current confinement structure is arranged on an upper surface of said upper optical waveguide layer.

5. (Previously Presented): A semiconductor laser device according to claim 2, wherein said lower optical waveguide layer, said quantum well layer, and said upper optical waveguide layer are made of an aluminum-free semiconductor material.

6. (Previously Presented): A semiconductor laser device according to claim 5, wherein said lower cladding layer is made of a semiconductor material containing aluminum.

7. (Previously Presented): A semiconductor laser device according to claim 2, wherein said index-guided structure is an internal stripe type or a ridge waveguide type.

8. (Previously Presented): A semiconductor laser device having an index-guided structure and oscillating in a fundamental transverse mode, comprising:

a lower cladding layer;

a lower optical waveguide layer formed above said lower cladding layer;

a quantum well layer formed above said lower optical waveguide layer;

an upper optical waveguide layer formed above said quantum well layer; and

a current confinement structure formed above said upper optical waveguide layer;

said upper optical waveguide layer has a first thickness smaller than a second thickness of said lower optical waveguide layer;

wherein said index-guided structure has a stripe width of 4 micrometers or smaller.

c1 9. (Currently Amended): A semiconductor laser device having an index-guided structure and oscillating in a fundamental mode, comprising:

a lower cladding layer;

a lower optical waveguide layer formed above said lower cladding layer;

a quantum well layer formed above said lower optical waveguide layer;

an upper optical waveguide layer formed above said quantum well layer; and

a current confinement structure formed above said upper optical waveguide layer;

an upper cladding layer disposed across a longitudinal direction of the index-guided structure to form a physical contact at a first edge and a second edge, the first and second edges aligned with longitudinal edges of the lower cladding layer;

wherein the current confinement layer is formed above said upper optical waveguide layer to be in physical contact with said upper optical waveguide layer.

10. (Previously Presented): A semiconductor laser device according to claim 9, wherein said upper optical waveguide layer has a first thickness, and said lower optical waveguide layer has a second thickness, and a sum of said first and second thickness is 0.5 micrometers or greater.

11. (Currently Amended): A semiconductor laser device ~~according to claim 9,~~ having an index-guided structure and oscillating in a fundamental mode, comprising:

a lower cladding layer;

a lower optical waveguide layer formed above said lower cladding layer;

a quantum well layer formed above said lower optical waveguide layer;

an upper optical waveguide layer formed above said quantum well layer; and

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a current confinement structure formed above said upper optical waveguide layer;
wherein the current confinement layer is formed above said upper optical waveguide
layer to be in physical contact with said upper optical waveguide layer;

wherein said lower optical waveguide layer, said quantum well layer, and said upper optical waveguide layer are made of an aluminum-free semiconductor material. .

12. (Previously Presented): A semiconductor laser device according to claim 11, wherein said lower cladding layer is made of a semiconductor material containing aluminum.

13. (Previously Presented): A semiconductor laser device according to claim 9, wherein said index-guided structure is an internal stripe type or a ridge waveguide type.

14. (Previously Presented): A semiconductor laser device according to claim 9, wherein said index-guided structure has a stripe width of 4 micrometers or smaller.

15. (Previously Presented): The semiconductor laser device of claim 2, wherein the sum of the first and second thicknesses is 0.5 micrometers or greater but less than or equal to 0.9 micrometers.

16. (Previously Presented): The semiconductor laser device of claim 2, wherein the sum of the first and second thicknesses is 0.5 micrometers or greater but less than or equal to .70 micrometers.
